
# Background Report
# Transportation

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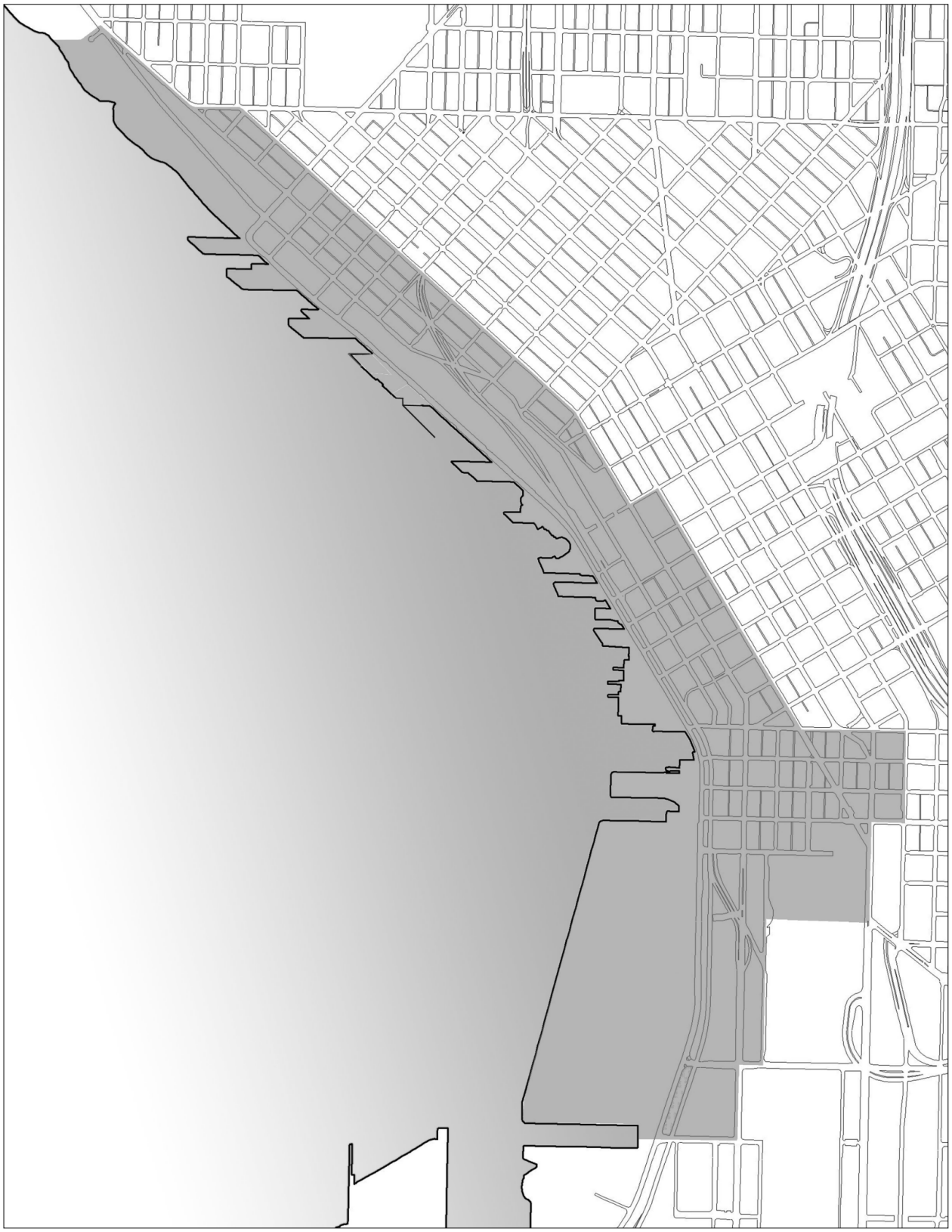
**Department of Planning and Development**
City of Seattle, Greg Nickels, Mayor
city design

# Seattle's Central Waterfront Plan: Study Area



Seattle's Central Waterfront Plan Background Report

# Transportation

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# Overview

The Central Waterfront has historically served the city as a transportation hub for port activity, as well as a corridor for moving goods and people through the region. The area continues to accommodate a great diversity of transportation modes. Waterborne passenger travel facilities still operate at the Washington State Ferry Terminal at Colman Dock, the Victoria Clipper dock at Pier 69, and the Bell Street Cruise Ship Terminal at Pier 66. The Port of Seattle operates a container cargo handling facility at Terminal 46. Alaskan Way, originally Railroad Avenue, was once the major rail corridor connecting the city's port to the transcontinental rail network. Although railroad operations were discontinued along the Central Waterfront south of Bell Street in 1986, the Burlington Northern mainline emerges from the portal of the downtown railroad tunnel near Stewart Street, continuing northward to Interbay. The waterfront streetcar operates today on original railroad right-of-way along Alaskan Way from Main to Broad Street. The Alaskan Way Viaduct is a regional vehicular route for through traffic that also provides access to downtown, and a network of surface streets accommodates local access and circulation. Bicycle and pedestrian trails are also popular and heavily used in the area. Figure 1 identifies the types of transportation modes and facilities present in the study area, and generally distinguishes between those primarily serving local access needs and those providing paths for movement through the area.

# Waterborne Transportation

The Central Waterfront is Seattle's gateway for goods and passengers traveling by water. The area plays an important role accommodating regional and international waterborne transportation. While cargo handling, once a principal function of the waterfront, is now limited to container operations on Terminal 46, passenger travel by ferry, cruise ship and various tourist and recreation vessels continues to have a significant presence in the area. These activities also have major impacts on surface transportation as passengers and goods are transferred from ship to the surface modes.

## Washington State Ferries

Washington State Ferries (WSF) is operated by the Marine Division of the Washington State Department of Transportation (WSDOT) and is a key component in the state's multimodal transportation system, serving as a mass transit provider and an extension of the state highway system. In addition to providing a vital link between the peninsula and island communities of the Puget Sound region, the Washington State Ferries also serve as the state's most popular tourist attraction. Colman Dock is the heart of the WSF system. It is an intermodal transportation terminal accommodating pedestrians, autos, trucks, buses, bicycles, and emergency vehicles. During fiscal year 2002, the average number of ferry passengers at Colman dock per day was 27,510, while the average number of vehicles was 8,022.

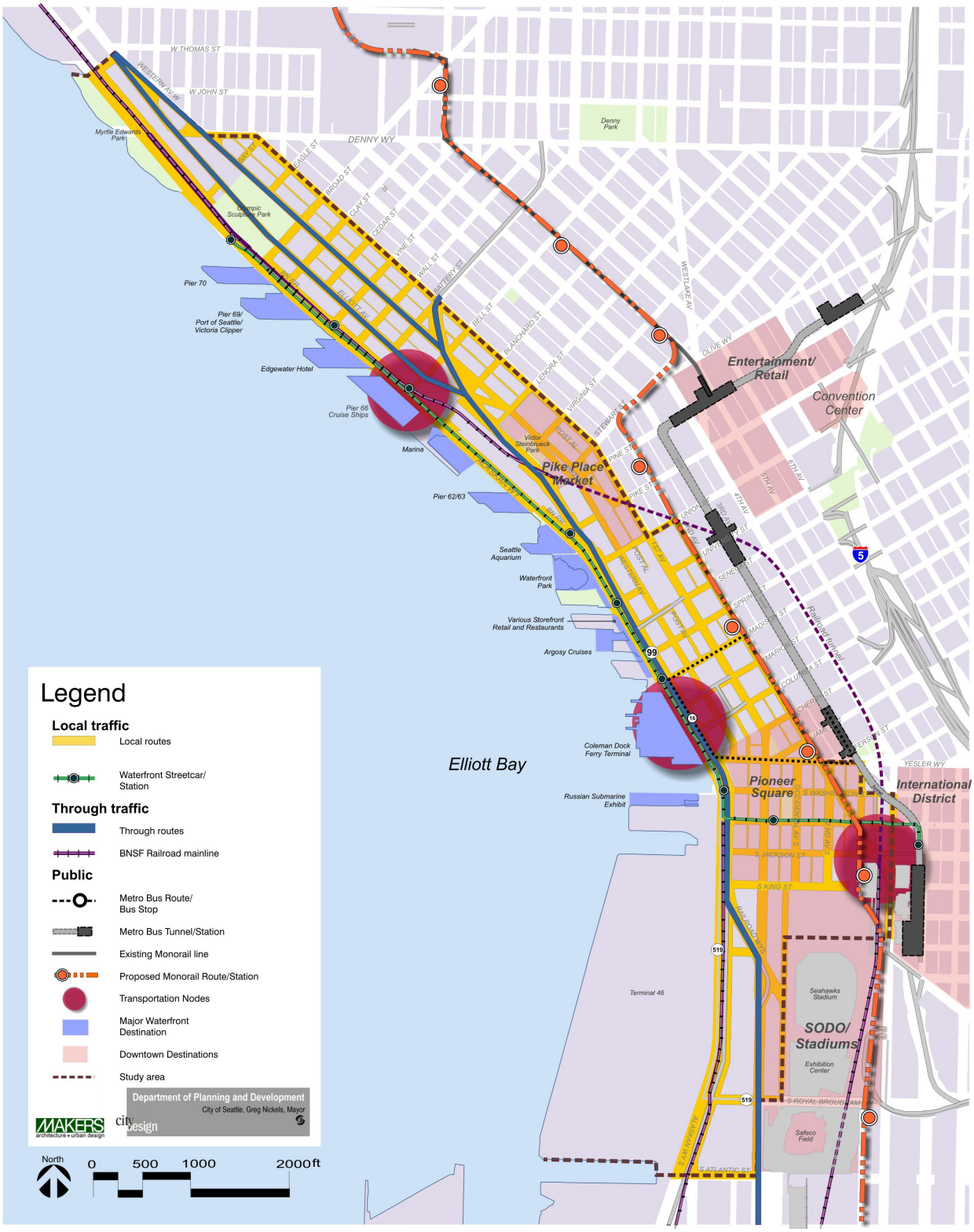



*Figure 1. Transportation Modes in the Study Area*

Colman Dock is Seattle's western gateway for commuters, commerce, and tourism. Currently, from the consolidated piers of Colman Dock, WSF operates passenger only service from Pier 50 and two auto and passenger ferry routes, Seattle-Bremerton and Seattle-Winslow, from the ferry terminal at Pier 52. Several thousand passengers (mostly commuters) pass daily through these terminals to and from Vashon Island, Bremerton, and Bainbridge Island.

- **Seattle—Bainbridge Island**
  With the highest ridership of any route in the WSF system (20,000 average daily passengers), the Jumbo Ferries on the Seattle/Bainbridge Island route connect downtown Seattle and the rest of King County with the residential areas on Bainbridge Island, as well as much of north and central Kitsap County via the bridge at Agate Passage. The 7.5 nautical mile, 35 minute crossing is also used by travelers to and from the Olympic Peninsula via the Hood Canal Bridge.

- **Seattle—Bremerton**
  Service between Seattle and Bremerton includes a conventional auto ferry route. The Seattle/Bremerton ferry service is somewhat unique among the WSF routes in that both the Seattle CBD and Bremerton are significant employment centers. As a result, the commute patterns are very bi-directional during both the AM and PM peak periods, and ridership falls off less during the midday shoulder periods than on other commuter-oriented routes.

  At 13.5 nautical miles, the Seattle/Bremerton route is the longest of the central cross-sound routes with a running time of about 60 minutes for the auto ferry and 50 minutes for the passenger-only ferry.

- **Seattle—Vashon**
  This passenger-only ferry provides weekday and Saturday service primarily for commuters and other pedestrians traveling from downtown Seattle to north Vashon Island. In addition, it provides a connection for foot passengers to/from Kitsap County via the Southworth/Vashon auto ferry. This route is 8.5 nautical miles in length and requires 25 minutes to cross. It operates during the AM and PM peak periods, with service suspended during the late morning and midday, and consequently exhibits essentially unidirectional ridership in the peak commute direction.

# Water Taxi

King County operates the Elliott Bay water taxi from spring to fall. During this time, daily service is provided from Pier 54 at the foot of Spring Street to Seacrest Dock in West Seattle. There is a need to provide a permanent docking facility for the water taxi. The preferred location identified for the dock is Washington Street Pier.

# Victoria Clipper

The Victoria Clipper, docking at Pier 69, provides daily hydrofoil service between Seattle and Victoria, British Columbia.

# Cruise Ship Operations

The Port of Seattle operates a cruise ship terminal at Pier 66/Bell Harbor. Now in its second year of operation, the facility is homeport to two cruise ships, with one more to be added next year. Between May and October of 2001, there were 56 cruise ship arrivals and departures. Eleven of these arrivals and departures were ports-of-call where the vessel typically arrives in the morning and passengers disembark for the day and return for an evening departure. Seattle is expected to have 140 cruise ship visits with 500,000 passengers over the 2004 ship season.

On the north edge of Pier 55, Argosy Cruises operates a local cruise service offering tours of the harbor and other destination points on Puget Sound.

# Moorage

## Commercial

Temporary and permanent moorage for various types of commercial vessels, including harbor our boats, is provided at various pier structures. Development standards require that all pier structures provide cleats for moorage on two sides with the capacity for vessels 100 feet in length, or that pier owners provide floats for smaller vessels to meet the requirement. Many piers already have this capacity and as others are renovated, they will be required to add cleats or floats.

## Recreational

The Washington Street Boat Landing is a small public transient moorage facility that can accommodate 10 boats. The boat dock is located at the foot of Washington Street, adjacent to the historic Washington Street Boat Landing pergola, and is within the South Washington Street right-of-way and the Pioneer Square Preservation District. The entrance to the boat dock is the historic Harbor Patrol Station pergola, which served as the water gateway into the city and the port of entry for foreign seamen. The building has been vacant since the Harbor Patrol moved out in 1963. The public boat landing tends to be underutilized for much of the year, in part because of public safety problems. However, boaters and the Pioneer Square community value short term moorage opportunities in the area.

More recently, a marina for the short term moorage of 70 boats, including charter and excursion vessels, was developed as part of the Port of Seattle's Bell Harbor project.

# Surface Transportation

## Vehicular Circulation

### Regional Access

Regional highway access to the study area is provided by I-90, I-5, and SR 99. A key access route to the study area, and the designated ferry access route, is SR 519, which includes portions of Alaskan Way South and South Royal Brougham Way. Alaskan Way South is classified as a minor arterial and a designated Oversized Vehicle and Truck Route. It is designated as SR 519 from Royal Brougham Way to Colman Dock. Parking is allowed where the roadway is widened specifically for on-street parking.

South Royal Brougham Way is classified as a principal arterial and is also designated as a Truck Route. South Royal Brougham Way provides a primary link between the marine terminals at the Port of Seattle, Colman Dock, Safeco Field and Seahawk stadium, and the I-5 and I-90 Interstate system. South Royal Brougham Way is designated SR 519 between 4th Avenue S. and Alaskan Way S. This east-west arterial is used by Metro Transit.

Average weekday traffic volumes on principal streets in the Study Area for 1995 are presented on Figure 2.

| Thoroughfare | Volume (average weekday volume) |
|---|---|
| **Alaskan Way Viaduct (SR 99)** | |
| • S. Atlantic Street to Railroad Way S. | 77,700 |
| • Railroad Way S. to Columbia Street | 102,300 |
| • Columbia Street ramp to Seneca Street ramp | 93,900 |
| • Seneca Street ramp to Western Ave exit | 85,400 |
| • Western Ave to Battery Street tunnel | 67,700 |
| **Alaskan Way** | |
| • Yesler Way to Lenora Street | 12,900 |
| • Lenora Street to Broad Street | 10,900 |
| **Elliott Avenue** | |
| • Western Ave to Denny Way | 17,600 |
| **Western Avenue** | |
| • Seneca Street to Stewart Street | 9,000 |
| • Stewart Street to Viaduct entrance | 12,300 |
| • Viaduct entrance to Denny Way | 17,700 |
| **1st Avenue** | |
| • S. Royal Brougham Way | 24,200 |
| • S. Royal Brougham Way to S. Jackson St | 15,000 |
| • S. Jackson S to Stewart St | 22,100 |
| • Stewart Street to Denny Way | 16,300 |

| Thoroughfare | Volume (average weekday volume) |
|---|---|
| **2nd Avenue** | |
| • Yesler Way to Stewart St | 15,400 |
| • Stewart Street to Denny Way | 12,400 |
| **S. Jackson Street** | |
| • S. Alaskan Way to 1st Ave | Less than 5,000 |
| • 1st Ave S to 4th Ave S | 15,000 |
| **S. Royal Brougham** | |
| • Alaskan Way to 4th Ave S | 15,000-20,000 |
| **Broad Street** | |
| • Alaskan Way to Denny Way | 10,000 |
| **Typical volumes on other east/west streets** | Between 5,000 and 10,000 |

*Figure 2. Traffic Volumes*
*(Source: Seattle Department of Transportation)*

Access to the waterfront corridor is restricted by limited east/west connections. Elliott and Western Avenues are an important north/south couplet that, together with Alaskan Way, provide an important Interbay/Ballard connection, which accounts for about one-third of the traffic on the Viaduct. Western Avenue tends to be underutilized since it traverses the "choke" point at the Pike Place Market, and Elliott Avenue terminates at the on-ramps to the Alaskan Way Viaduct.

Alaskan Way plays a unique role as the waterfront street, serving multiple purposes as an access route to the ferries, a tourist connection to the waterfront and to the cruise ships, and as a local street that occasionally is used for limited through-movement and as a way of bypassing the congestion further upland in Downtown.

## Street Classification System

All Downtown streets are classified according to standards that define the functional relationship of the various uses of the right-of-way, including their traffic function, transit function, and pedestrian function. These classifications (shown in the Appendix for each street) are intended to integrate multiple vehicular and pedestrian needs, minimize modal conflicts, reflect and reinforce adjacent land use, and provide the basis for identifying and prioritizing capital improvements and operating changes.

- **Traffic Classification**
  Traffic street classification reflect the role of a particular street in the citywide vehicular circulation network. Traffic street classifications indicate how a street should be designed, used, and maintained, including the volumes of traffic to be accommodated.

Street classification in the study area reflect the waterfront's role as both a corridor for through vehicular traffic and a destination with local service access needs. The range includes Regional Freeway/Expressway classifications for the Alaskan Way Viaduct (SR 99); Principal Arterials like 2nd, Elliott, and portions of Western Avenues; Minor Arterials like Yesler Way, Western south of Bell Street, and 1st Avenue; and Local Access Streets.

- **Transit Classification**

  The transit street classification identifies a street's suitability for serving as a route for different levels of bus service. For Downtown streets, the classifications also ensure that high volumes of buses are limited to streets with adequate sidewalk space to accommodate waiting passengers.

  Within the study area, the classifications reflect that waterfront's limited transit access-- west of 1st Avenue, only the Minor Transit Street classification applies; primarily on Alaskan Way and Western/Elliott Avenues.

- **Pedestrian Classification**

  The Pedestrian Classification, established in the Downtown Land Use Code, identifies a street's role in the Downtown pedestrian circulation network and distinguishes between streets according to the volume and type of pedestrian activity anticipated.

  Within the Study Area, only portions of 1st and 2nd Avenues, Post Alley/Western Avenue and Pike Street are designated Class I Pedestrian Streets, with the highest priority to accommodate pedestrian movement. Most of the other streets in the study area are Class II Pedestrian Streets, although several east/west streets are designated Green Streets.

# Intermodal Access

The evolution of the study area's strategic role in regional transportation has resulted in the development of several intermodal facilities—places where people and goods move from one form of transportation to another. Accommodating the different needs of various transportation modes and the complexities of how they interface presents special challenges that affect both circulation and development in the area.

## Colman Dock Ferry Terminal

Colman Dock is a major destination and arrival point for vehicles connecting with the regional routes of the ferry system. Ferry traffic represents about 2 percent of the weekday traffic entering and exiting Downtown. Within the study area, ferry traffic represents about 34 percent of total traffic on Alaskan Way south of Yesler Way, where 1994 traffic counts indicate a total volume of about 17,000 vehicles per day (vpd).

The average daily traffic at Colman Dock in 1994 was about 8,000 vpd, with 4,000 vpd entering and 4,000 vpd exiting the site. During the peak season, added tourist activity increases the average daily traffic to 9,230 vpd. Pulses of traffic occurring during ferry arrivals and queuing of traffic waiting to board ferries create special demands on circulation and road capacity in the area.

Access to and egress from Colman Dock are provided by two driveways along Alaskan Way, at Marion Street and at Yesler Way. The Marion Street driveway serves as an exit driveway from the site for vehicles disembarking the Bainbridge Island ferries, with Marion Street serving as link to Interstate 5. The driveway at Yesler Way serves all entering ferry traffic as well as exiting traffic from the Bremerton ferries and accommodates most of the exiting traffic from the Bainbridge Island ferries.

The ferry terminal generates more traffic during the weekday p.m. peak hours than other times of the weekday or weekend. The midday volumes increase during the summer, especially on weekends due to tourism, but are still not as high as p.m. peak hour. Ferry operations have an impact on traffic volumes in the study area, with streets providing access to the ferry experiencing higher daily and peak hour traffic volumes. Traffic bound for Colman Dock approaches the site along Alaskan Way. Signing directs drivers to use Royal Brougham Way west to the Alaskan Way Viaduct. Traffic is routed under the viaduct in an area devoted to queue storage, then discharged onto Alaskan Way at a signalized intersection. From this point, traffic is directed to the left lane of northbound Alaskan Way to enter Colman Dock via a left turn at Yesler Way.

Exiting traffic can use the Marion Street driveway to turn left or right onto Alaskan Way or to continue eastbound on Marion Street into downtown. All vehicle traffic exiting via the Yesler Way driveway must turn right onto southbound Alaskan Way.

Traffic signals along Marion Street operate on a longer cycle length during arrivals of the Bainbridge Island ferries to facilitate vehicle unloading. These signals, at Alaskan Way and Western Avenue, provide cycles up to 2 minutes in length for this purpose. Traffic entering Colman Dock at Yesler Way is provided with an exclusive left-turn signal phase and arrow.

Holding areas on the Colman Dock can accommodate up to 700 vehicles, equivalent to about four boatloads. Occasional queues in excess of this volume are stored on northbound Alaskan Way and under the viaduct.

## Cross-Sound Commuting

The nature of cross-Sound commuting will likely change in the future, with the possibility of new service providers, terminal locations, advanced vessel technologies, and a different mix of passenger-only and car ferries. While the State of Washington is currently reducing passenger-only ferry service, it is likely that new passenger-only ferry service will be provided by other operators at or in the vicinity of Colman Dock, where commuters will continue to have access to their final destinations on foot or by transit.

### South Downtown Intermodal Access

The SP 519 Intermodal Access project includes a number of proposals designed to improve through traffic from I-5 and I-90 to the waterfront and to eliminate conflicts between existing intermodal facilities serving the south Downtown area, such as the blocking of through traffic on surface streets by trains on the Burlington Northern Santa Fe (BNSF) railroad. The first phase of the project, a grade-separated crossing of SR 519 over the railway lines at South Atlantic Street near Safeco Ballpark, is completed.

### King Street Intermodal Terminal

Proposals are being developed to enhance the function of King Street Station as an intermodal terminal serving Amtrak, Sound Transit commuter rail, Metro transit, and others.

## Parking

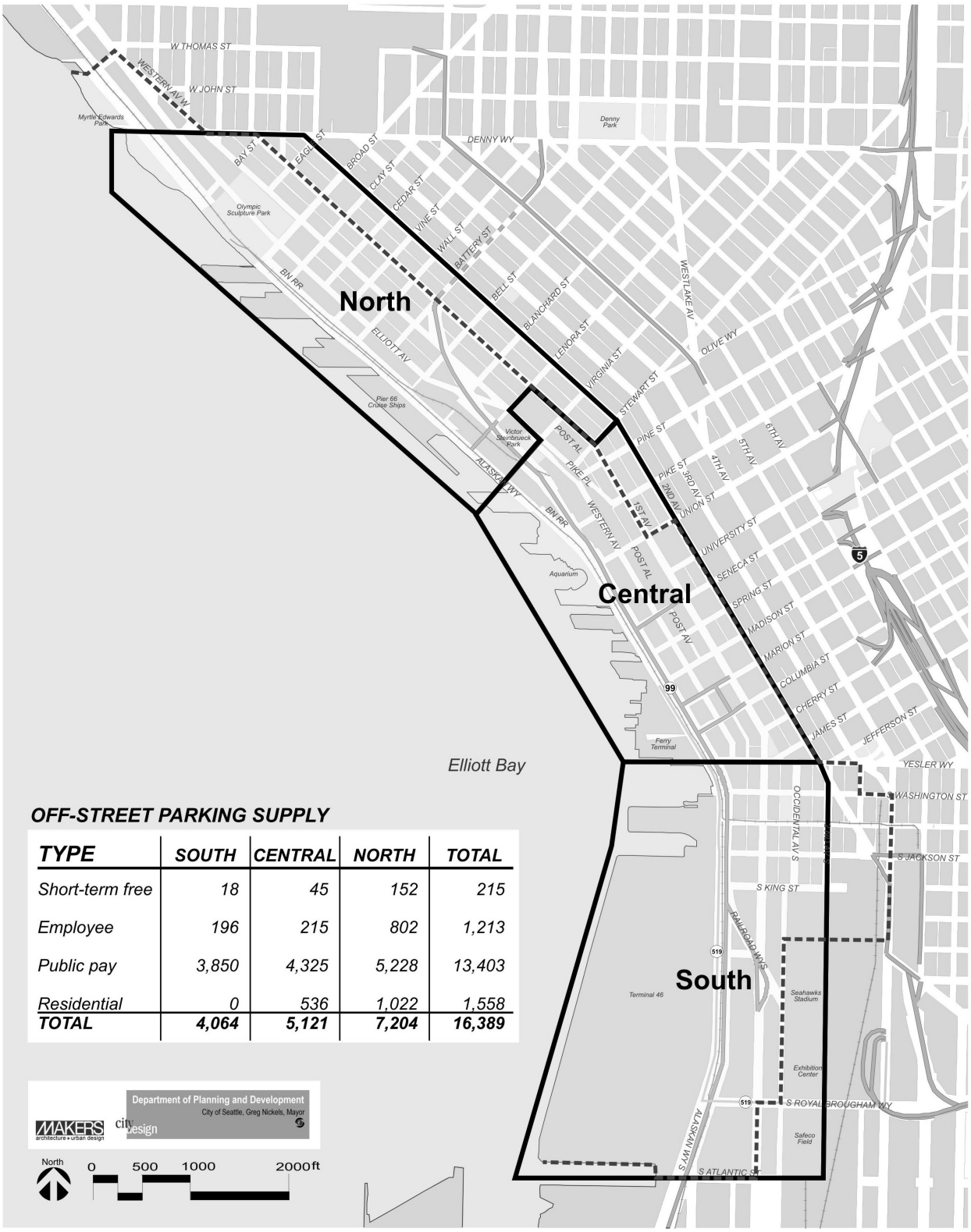
The physical characteristics of the study area have historically limited the amount of convenient and affordable parking available. With Puget Sound to the west, 1st Avenue rising to a 100 foot bluff on the east, and the Viaduct and railroad tracks occupying significant space just east of Alaskan Way, the availability of parking near the Central Waterfront during peak summer months has long been a source of concern for area merchants and visitors. In addition, a good deal of the parking serves the retail and financial districts.

Development on surface parking lots in the area has reduced the amount of parking available to the public while the draw of Waterfront destinations has increased parking demand. It is widely accepted that the demand for parking is greater than the perceived supply and that this deficit would increase with the anticipated increases in demand generated by planned Waterfront projects. Provision of adequate short-term parking continues to be a major issue for sustaining the economic vitality of the area.

### Off-Street Parking

The inventory of off-street parking includes short-term free parking provided by businesses for customers, employee or reserved parking restricting public access, public pay parking open to the general public, and residential parking with access restricted to building residents. The total supply of off-street parking in waterfront parking zones (Figure 3) is approximately 16,400 off-street spaces, based on information from the 1999 Puget Sound Regional Council (PSRC) Parking Inventory Report. Out of this total, approximately 13,400 spaces are available for public use. Most of this parking, 12,642 spaces, is provided on public lots. Three of the biggest facilities include the Bell Street Pier Garage (1,700 spaces), the Public Market Parking Garage (500 spaces), and the Republic Parking lot at Spring Street and Western Avenue (200 spaces).

The supply of public off-street parking is expected to decrease by 761 spaces, largely due to the loss of surface parking in the north end due to residential developments.




**OFF-STREET PARKING SUPPLY**

| TYPE | SOUTH | CENTRAL | NORTH | TOTAL |
|---|---|---|---|---|
| Short-term free | 18 | 45 | 152 | 215 |
| Employee | 196 | 215 | 802 | 1,213 |
| Public pay | 3,850 | 4,325 | 5,228 | 13,403 |
| Residential | 0 | 536 | 1,022 | 1,558 |
| **TOTAL** | **4,064** | **5,121** | **7,204** | **16,389** |



*Figure 3. Off-Street Parking*

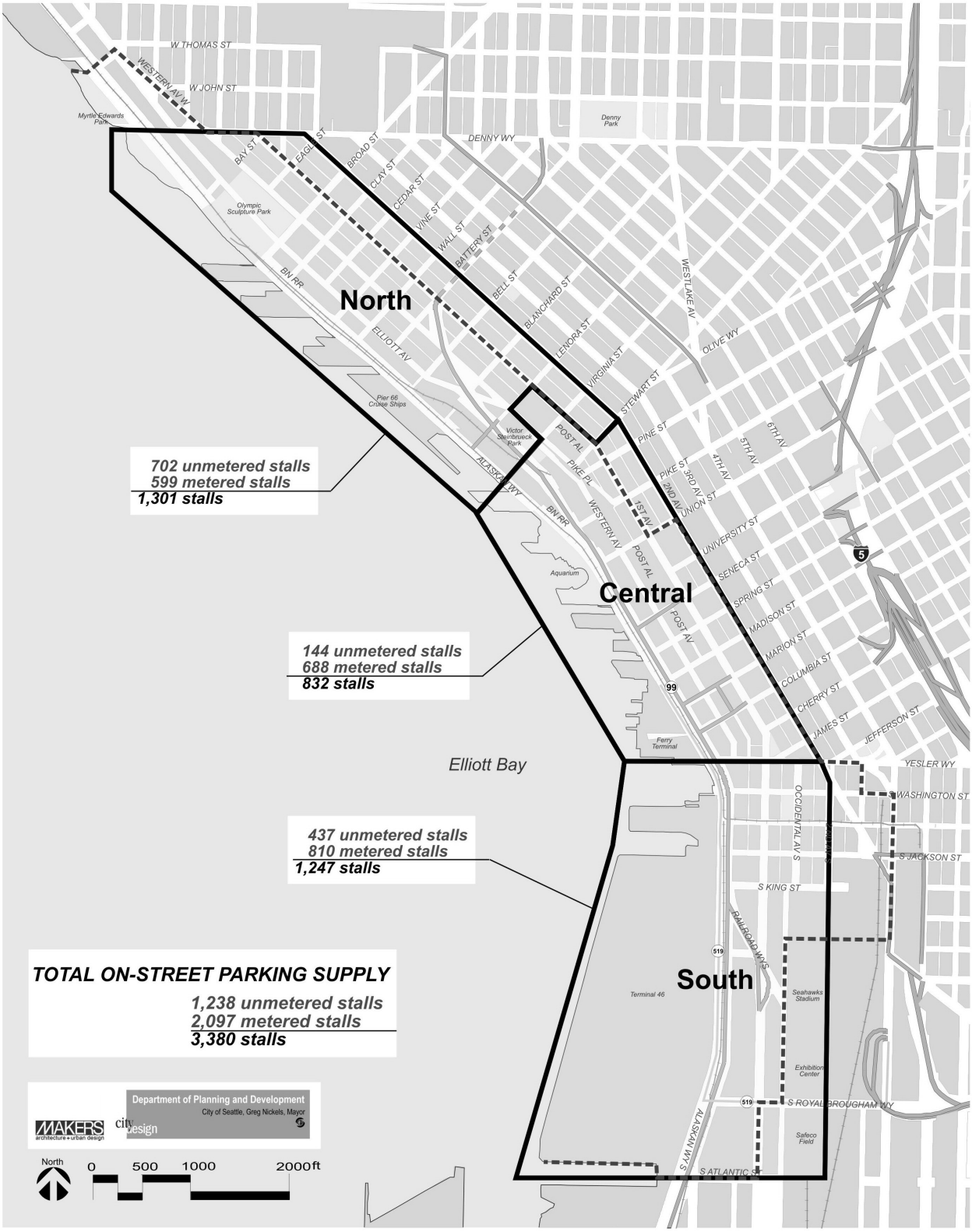



*Figure 4. On-Street Parking*

On the other hand, the supply of non-public spaces is projected to increase by 4,755 stalls, mostly provided in private residential and commercial projects.

### On-Street Parking

The on-street parking supply is, for the most part, reserved for short-term public parking and is controlled by parking meters with a two-hour limit. There is a limited amount of long-term on-street parking that is not controlled or has signs indicating parking restrictions. Most of this supply is located in the south end. Lesser amounts of the on-street parking supply are reserved for load zones or other restricted short-term uses.

Although the boundaries established for parking zones do not directly correspond to the study area boundaries, generally, within the Central Waterfront planning area, there are approximately 1,650 un-metered spaces, with about 1,300 of these spaces available for public parking (Figure 4). There are approximately 2,100 metered spaces, for a total of 4,800 on-street spaces, of which 3,380 are available for public use. Out of this total, approximately 700 short-term parking spaces and 300 long-term parking spaces are currently provided along the waterfront under the Viaduct and in leftover spaces associated with it.

The supply of on-street parking are anticipated to diminish by approximately 676 spaces as a result of the development of the Olympic Sculpture Park (loss of 87 spaces), Washington State Ferry plans on Alaskan way (loss of 214 spaces) and replacement of the Viaduct (loss of 375 spaces). Since adequate short-term parking is essential to supporting the economic vitality of the area, this reduction in the short-term parking supply through the loss of on-street parking spaces is an issue that needs to be addressed.

## Goods Movement

Alaskan Way plays an important role in the movement of goods for the region, providing access to the industrial district to the south and activities on the waterfront. The Port of Seattle's Terminal 46 is an important container ship terminal. Truck access is primarily from the south by Royal Brougham Way and Alaskan Way, with trucks turning left from Alaskan Way into Terminal 46 near King Street.

Alaskan Way is a designated truck route and can be used by oversize and overlegal loads with permits.

At the northern end of the waterfront, the Elliott/Western couplet is of paramount importance to truck movement from the Ballard/Interbay/Northend Manufacturing and Industrial Center to the S.R. 99 corridor.

# Transit

## King County Transit and Streetcar

King County Transit provides bus service in the study area and operates the Waterfront Streetcar (Route 99), an electric trolley on Alaskan Way. The majority of the buses are routed north-south along First Avenue. Trolley buses on First Avenue use S. Jackson Street as a turnaround.

Route 16, connecting Downtown with the Northgate Transit Center, provides the only east-west bus access to the waterfront. Within Downtown the route is southbound on 5th Avenue, west on Madison Street to Alaskan Way, south on Alaskan Way to Yesler Way, east on Yesler Way to 3rd Avenue, then northbound on 3rd Avenue. There is only one stop at the Ferry Terminal (Pier 52) on the southbound leg along Alaskan Way between Madison and Yesler Way. Route 16 provides 15 to 20 minute service all day during the week, and 30 minute service at night.

Route 99 is the route of the waterfront streetcar. The City leases track from Burlington Northern for the operation of the waterfront streetcar between Pier 70 at Broad Street and Main Street, where new track extends the route eastward to a final stop on 5th Avenue between Main and Jackson Streets. The streetcar makes seven Waterfront stops at Broad, Vine, Bell, Pike, University, Madison, and Main Streets, as well as stops at Occidental Park in Pioneer Square and Jackson Street in the International District. The streetcar uses a power supply wire hung about 18.5 feet above the top of the rail. The route operates on weekdays between 6:45 AM and 6:45 PM and weekends between 10 AM and 7 PM with 20 minute headways. While the streetcar provides connections to activities along the waterfront, as well as links to Pioneer Square and the edge of the ID, it does not improve connections to the central core, and primarily serves recreational uses and visitors. Route frequencies are constrained because the streetcar operates on a single track, with no special provisions to allowing passing.

Regional transit service is within walking distance of the waterfront, primarily along 2nd and 4th Avenues and in the transit tunnel underneath 3rd Avenue. Access to the transit tunnel is at the Financial Center Station/University Street and the Pioneer Square Station/James Street. The alignment of the proposed monorail is along 2nd Avenue on the western edge of the study area between Stewart Street and Pioneer Square. Major elements of Downtown's fixed route transit services are shown on Figure 5.

## Grayline Waterfront Trolley

Gray Line operates a local circulator route with stops along the Waterfront, Pioneer Square, the Downtown Retail Core, Seattle Center, and the Pike Place Market. The route operates on a daily basis from May to October between the hours of 9 AM and 6 PM. The primary users of the trolley are tourists staying in Downtown hotels.

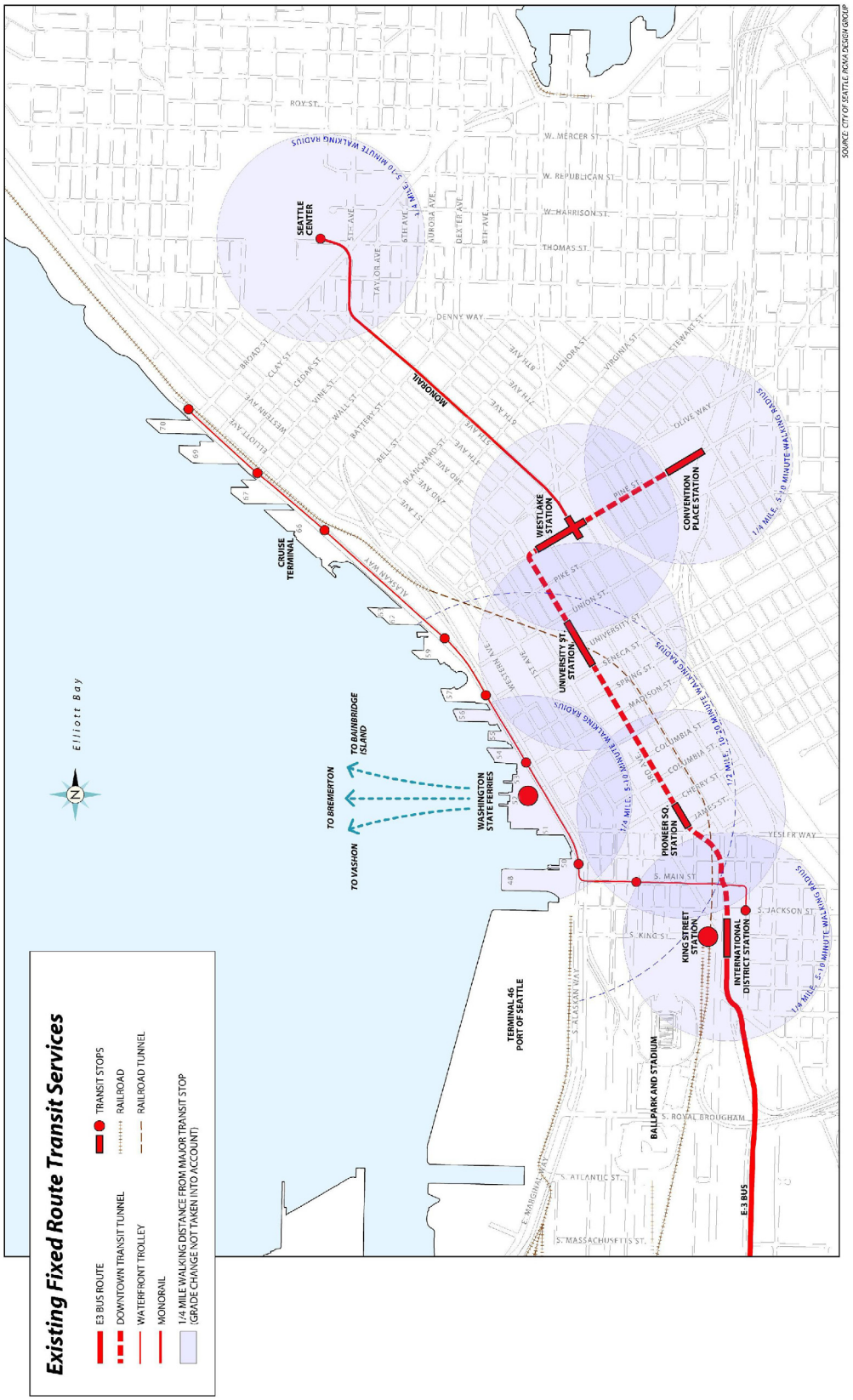



*Figure 5. Existing Fixed-Route Transit Service*
*(Source: ROMA Design Group)*

### Transit Accessibility

Accessibility to the transit system is determined by the route network structure and the frequency of service. Generally, the area bounded by 1st Avenue, Stewart Street, 5th Avenue, and Yesler Way has the highest accessibility. Much of the Central Waterfront area represents that other extreme. Here, regional and local transit service is poor due to limited connections and limited frequency. The least accessible areas downtown are located at the southern (south of Washington Street) and northern (north of Pike Street) ends of the waterfront, where transit access is constrained by the topography that limits pedestrian travel between the downtown core and Alaskan Way. Riders must transfer in the CBD to lines operating at long headways, or they must traverse steep east/west grades. Since the majority of downtown transit trips are commuter/work related, the relatively low employment density of the waterfront area also results in low transit demand.

### Future Improvements

Significant changes will occur to fixed route regional transit service over the next decade. Sound Transit will replace regional bus service in the transit tunnels with regional light rail upon completion of the initial light rail segment. The Elevated Transportation Company is building an initial monorail line above 2nd Avenue, with stations proposed along this segment in the vicinity of 2nd and Pike Street, 2nd and Madison Street, and 2nd and Yesler Way. Sound Transit will also begin operating commuter rail service between Seattle and Everett, which will use the Burlington Northern mainline tracks along the waterfront north of the tunnel portal between Virginia and Stewart Streets. Except for King Street Station, no station stops are proposed in the study area.

### Center City Circulation Report

SDOT recently completed a "Center City Circulation Report" focusing on the Downtown Urban Center continuing south to South Atlantic Street (to include early future alternatives for Terminal 46), First Hill/Capitol Hill Urban Center, Uptown Urban Center, and South Lake Union Hub Urban Village. Its purpose was to present a multi-modal, system-wide blueprint for improved circulation within the Center City. A focus was placed on public transportation, bicycle, and pedestrian needs. The report includes ideas for better integrating the downtown future network and includes many recommendations relevant to transit, bicycle, and pedestrian access to the waterfront.

## Pedestrian Circulation

The proximity of the waterfront to the Downtown Commercial Core, Belltown, Pioneer Square and numerous other destinations makes walking the mode of choice for many. Major points of access for pedestrians include the Colman Dock Ferry Terminal for commuters and tourists, east/west streets linking the waterfront to the working population of the commercial core, and the Pike Street Hillclimb connecting the Pike Place Market with the waterfront at the Seattle Aquarium, which is heavily used by tourists.

The grid pattern of Downtown makes for very walkable urban streets and is partitioned into blocks well scaled for pedestrians. However, steep topography interrupts the continuity of east/west streets to the waterfront. Extensions of the street grid to the waterfront are limited, with only four vehicular/pedestrian streets connecting in Belltown (Broad, Clay, Vine, and Wall Streets); three in the Commercial Core (Spring, Madison, and Marion Streets); five in the Pioneer Square area (Yesler Way, Washington, Main, Jackson, and King Streets); and two in the southern area (Royal Brougham Way and Atlantic Street).

Volumes of pedestrian traffic in the study area reflect these conditions of access and the location of major activity generators that attract pedestrians, such as the ferry terminal. Figure 6 presents pedestrian counts from 2001 at selected locations within the waterfront study area:

| Location | Lunch Average | Daily Average |
|---|---|---|
| 1st Avenue at University/Harbor Steps | 2,507 | 7,748 |
| 1st Ave at University – up/down Harbor Steps | 1,589 | 2,880 |
| 1st Ave & Yesler – crossing Yesler | 2,495 | 6,640 |
| Alaskan Way at Union Street | 1,917 | 5,856 |
| Alaskan Way at Pier 56 | 1,580 | 3,741 |

*Figure 6. Pedestrian Counts from Selected Locations*
*(Source: Downtown Seattle Association website; Seattle Department of Transportation, September/November 2001)*

Pedestrian stairways and overpasses have been very important to facilitating pedestrian access the waterfront, with existing connections at Bell and Lenora Streets, the Pike Street Hillclimb, Union Street, University Street (Harbor Steps), and Seneca Street. The Bell Street pedestrian bridge provides a waterfront connection over the railway mainline and Alaskan Way. Nearby, the Lenora Street pedestrian bridge provides a connection to Alaskan Way over the railway mainline. The commuter bridge on Marion Street also provides a pedestrian overpass above Western Avenue and Alaskan Way to link 1st Avenue with the Washington State Ferry Terminal. The remnants of a pedestrian stairway once located at Stewart and Pine Streets, but destroyed by fire, can still be seen. Various factors that influence pedestrian accessibility in the area are shown on Figure 7.

## Sidewalks

Most east/west streets connecting to the waterfront include sidewalks on both sides that are typically 11 feet wide. However, this pedestrian space is frequently encroached upon by ramp structures for the viaduct and other intrusions.

On the water side of Alaskan Way, the sidewalk ranges in width from 15 feet north of Piers 62/63 to 20 feet in the south. While this is somewhat wider than the typical 12 foot sidewalk width Downtown, the space has not been consciously designed as a waterfront promenade oriented to walking, sitting, and enjoying the scenic vistas of Elliott Bay and the mountains beyond.


*Figure 7. Pedestrian Accessibility*
*(Source: ROMA Design Group)*

### Pedestrian Connections to the Ferry Terminal

During the morning peak hour, approximately 1,800 persons depart the ferry terminal on fort, most of whom use the Marion Street commuter bridge to access Downtown. According to surveys conducted in 1992, 73% of the Downtown foot traffic has destinations in the Commercial Core north of Columbia Street and south of Stewart Street/Olive Way. Another 19% travel further north of Stewart Street/Olive Way towards Belltown, and 8% travel south to destinations between Columbia and S. Jackson Streets.

The concentration of downtown walk-on trips is especially significant in the blocks bounded by Union and Spring Streets and 2nd and 5th Avenues, where over one-fourth of Downtown walk-on ferry trips are destined. Within the Commercial Core, several private projects provide mechanical assists, including escalators and elevators, for pedestrians traveling up steep slopes. In some projects, including the recently completed IDX Tower, these features were provided for a floor area bonus.

### North Waterfront Pedestrian Conditions

The number of people walking on the waterfront and in Belltown will undoubtedly increase as new development is completed, including additional residential units, retail activity and the Olympic Sculpture Park. Current challenges for pedestrians include crossing the arterials when walking along designated Green Streets, and the inaccessibility of Myrtle Edwards Park from the east. Delay when trains pass through the waterfront can be inconvenient for pedestrians, and the mix of pedestrians and trains at grade can present safety issues.

## Railroad Operations

Railroads once dominated the waterfront and were largely responsible for reshaping the shoreline to accommodate railway lines through the city and connections to waterfront piers. Train activity today on the waterfront, however, is much more limited.

### Burlington Northern Santa Fe

The railroad running through the north waterfront today is the Burlington Northern Santa Fe mainline serving both the West coast and traffic to Chicago and points east. The tracks also serve the grain terminal near Interbay. The amount of rail traffic in the tracks is a factor of infrastructure capacity and market demand. The frequency and length of trains may increase in the future.

### Amtrak

Amtrak uses the tracks for passenger service north to Canada, south to California and east via Stevens Pass. This route is part of a federally designated high-speed corridor.

### Commuter Rail

In the near future, commuter rail will run from King Street Station north to Everett. A commuter rail stop may be built in the north waterfront, although this is not anticipated in the first phase of commuter rail. Possible locations of a station could be either just north or just south of Broad Street, or near Lenora Street. A commuter rail platform could extend as much as 1000 feet. Commuter rail service in the Broad Street area could make the north Waterfront multi-modal hub for rail, water and trolley and other potential service.

## Bicycle Circulation

Cycling is a growing mode of travel for commuting as well as recreational trips, both within the Study Area and throughout the region. Figure 8 identifies the existing hierarchy of bicycle routes within the study area.

Alaskan Way is part of the bicycle circulation network for the region and is commonly used by bicyclists. Alaskan Way is an important arterial for cyclists because it provides a flat connection between the Elliott Bay Trail to the north and streets connecting to Pioneer Square, the International District, and points beyond to the south. Improvements associated with the development of upland Port properties between Pike and Bell Streets included a bicycle and pedestrian trail on the east side of Alaskan Way. Currently, Alaskan Way is a Class III Bicycle Route and incorporates a 10-foot exclusive bicycle/pedestrian trail adjacent to the Viaduct. It is a posted bicycle route, but like the bicycle routes in most of the Downtown, no space has been reserved for this purpose exclusively. Rather, bicyclists share space with joggers and pedestrians, which can pose conflicts. In addition, access to the waterfront on the northern end of the harbor and across the rail tracks can be difficult.

To the north, at Myrtle Edwards Park, the Elliott Bay Trail begins – a Class I (off-street) route for bicyclists that extends 1.5 miles along the shoreline with an 8-10 foot wide asphalt path. The Elliott Bay Trail provides a connection across Interbay to Magnolia, and is planned to be extended to the south to be connected to and along the waterfront as part of the Seattle Waterfront Path.

East Marginal Way, to the south of Alaskan Way, is a key bicycle street and provides access to the signed bike route along the west shore of the Duwamish and the bike path to West Seattle on the low-level bridge.

The increasing popularity of cycling to, from and within Downtown is reflected in comparisons of 1992 and 1995 bicycle counts, which increased by a total of 28 percent. The three count locations likely to best reflect conditions in the study area are Myrtle Edwards Park, Alaskan Way and Royal Brougham, and the Seattle Ferry Terminal, which experienced increases of 37%, 64%, and 3% respectively.

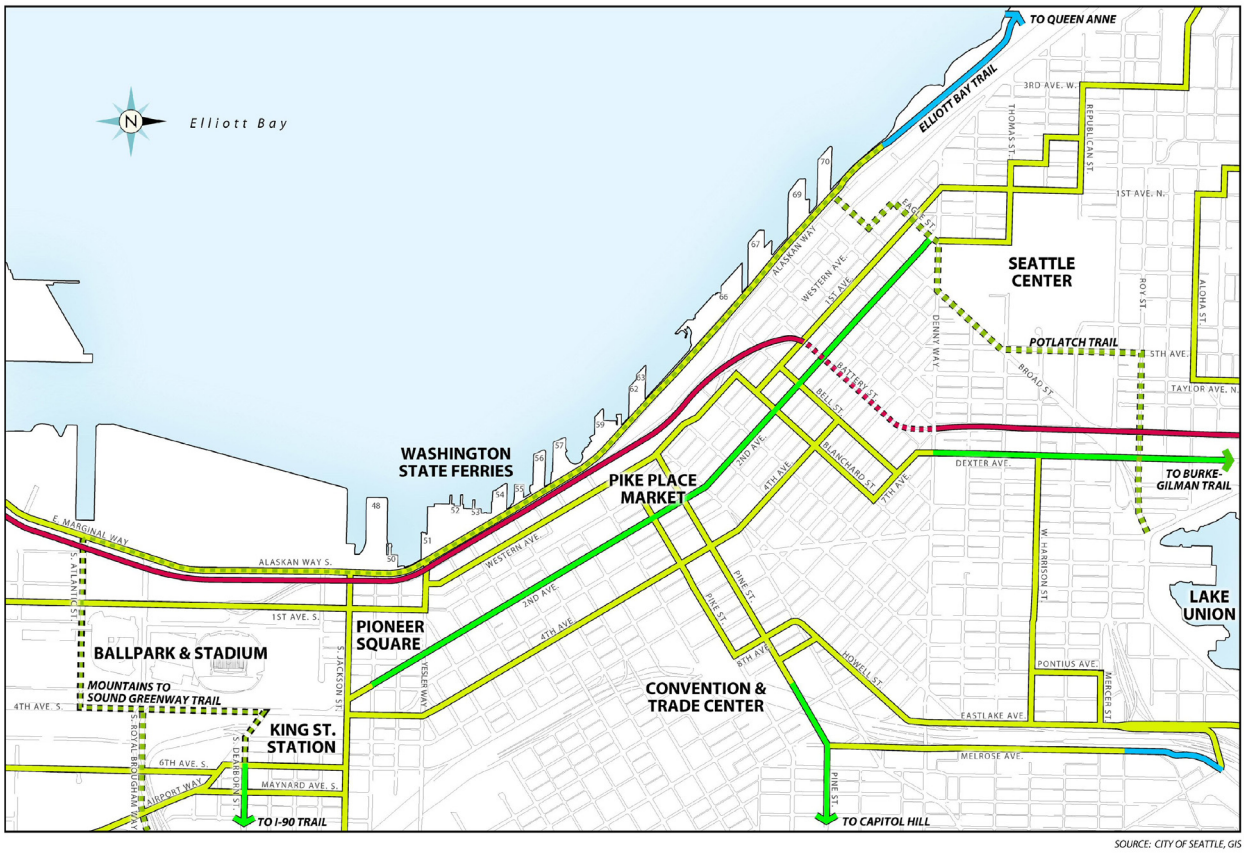
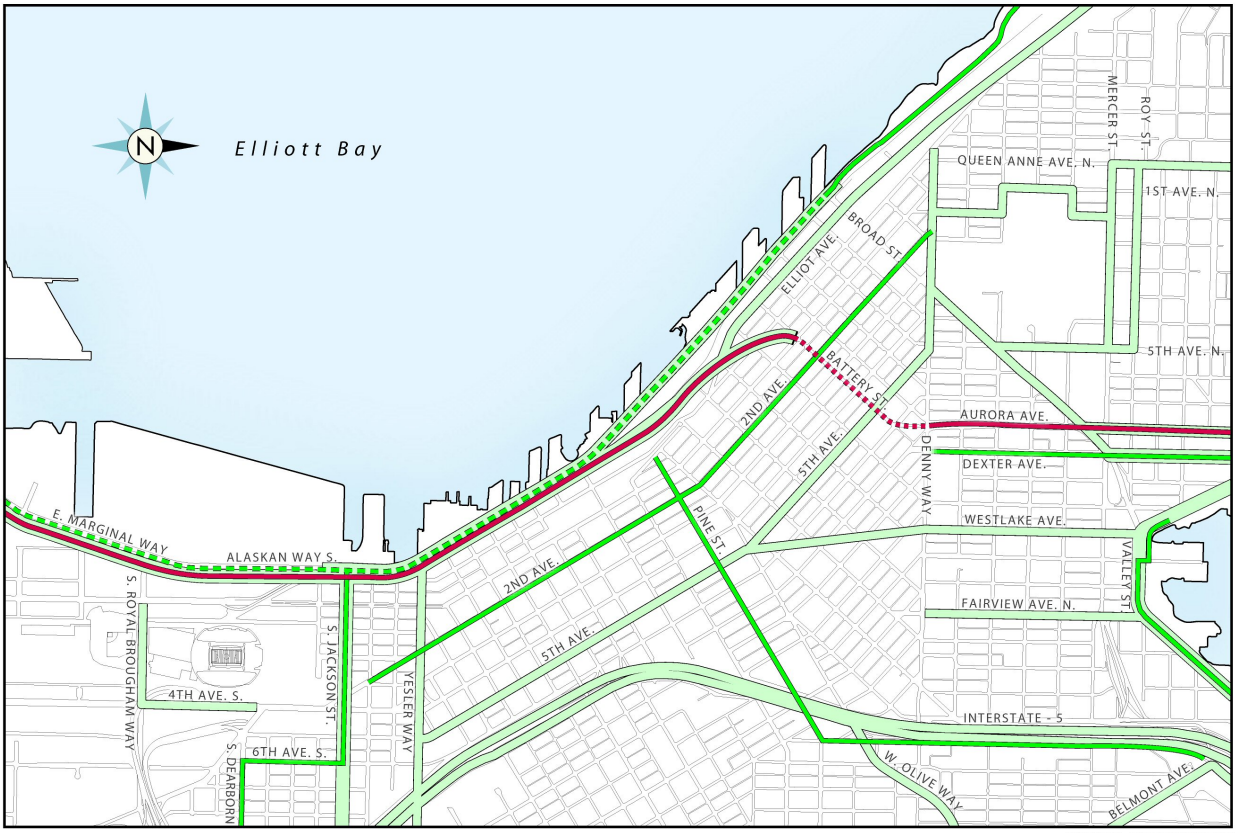



*Figure 8. Bicycle Routes*
*(Source: ROMA Design Group)*

Bicycling along the waterfront is complicated by narrow traffic lanes, railroad tracks at intersections to the CBD, irregular pavement under the Viaduct, rail spurs in the Alaskan Way roadway, steep grades up to the Downtown core, vehicular congestion--especially related to queuing at the Ferry Terminal, substantial pedestrian traffic, and limited connections to other parts of downtown.

# Urban Trails

The City has designated a system of Urban Trails to facilitate walking and bicycling as viable transportation choices, provide recreational opportunities and link major parks and open spaces with Seattle neighborhoods. Within the Central Waterfront planning study area, the designated Urban Trails for the most part correspond with designated bicycle routes, and include 2nd Avenue from Denny Way to Pioneer Square, Pine Street to the Pike Place Market, S. Jackson Street from Alaskan Way to 5th Avenue S., and Alaskan Way. The trail network is shown on Figure 9.




SOURCE: CITY OF SEATTLE

## *Trails and Scenic Routes*

- SCENIC VIEW ROUTES
- URBAN TRAILS: EXISTING
- URBAN TRAILS: EXISTING/IMPROVEMENTS NEEDED
- EXISTING STATE ROUTE 99

*Figure 9. Urban Trails*
*(Source: ROMA Design Group)*

# Alaskan Way Viaduct

Following the Nisqually earthquake of February 2001, it has been determined that the Alaskan Way Viaduct and waterfront seawall are in need of major repair or replacement. The Alaskan Way Viaduct and Seawall Project can create new opportunities previously not possible for the waterfront, the downtown neighborhoods, and the city as a whole. All of the replacement alternatives under consideration share some essential benefits and create some new potentials. Each of the replacement alternatives will affect multimodal local access and circulation, visual and environmental quality, recreation and open space opportunities, and the image and identity of the city as a whole as well as land use policy, future development opportunities and the economic vitality and the overall attractiveness of the city as a place to live and work.

The Viaduct structure is as high as 65 feet and currently occupies 51 feet within the Alaskan Way right-of-way. While the State of Washington is responsible for the Viaduct Structure itself, the City of Seattle owns the land that it occupies. Along the edge of Pioneer Square, the structure comes as close as 10 feet to historic buildings, and moves further away (50-60 feet) along the edge of the Commercial Core. The structure itself, and the noise of the traffic it carries, has created a barrier along the waterfront's downtown edge and also has had a detrimental effect on adjacent development.

## South of King Street

From King Street south to Atlantic Avenue, major issues and opportunities to be addressed include:

- Improvements to Spokane Street interchange for access to SR 99 and improved vehicular connections via Atlantic Avenue and Royal Brougham to SR 519.
- Improved access to Terminal 46, which may enhance redevelopment of the area for a variety of activities complementing development in both the shoreline and adjacent Pioneer Square area, while also improving truck access to Port of Seattle container terminal, should that facility remain, or other waterborne cargo or passenger facilities replace it.
- Provisions for vehicular holding area for the car ferries which can significantly diminish the vehicular impact of the ferry terminal on the Pioneer Square area.
- Promote improvements that complement and support current planning efforts and city policies to link the Ballpark/Stadium area with Pioneer Square, encourage redevelopment of the surface parking lots adjacent to the Stadium make this area a more integral part of the city, and enhance its economic vitality.

# Historic Harborfront

From King Street to Broad Street, issues and opportunities to address include:

- Reconfiguration of the Alaskan Way right-of-way from King Street to Broad Street to enhance pedestrian and bicycle circulation and to improve streetcar service and ferry terminal operations
- Widening the pedestrian promenade and improving pedestrian crossings from inland areas to the waterfront.
- Improve the function and accessibility of the Colman Dock Ferry Terminal
- Improve environmental quality of the area (visual, noise, air quality, and shading) and the natural environment along the seawall
- Reclaim existing "leftover space" for open space or recreational use to better complement waterfront activities
- Enhance the character of the waterfront area to increase desirability for pedestrian related activities and linear recreational pursuits, such as jogging and walking.
- Pursue new open space opportunities on sites previously unavailable of undesirable for recreational activities
- Better integration of Aquarium with Pike Place Market and Belltown areas
- Develop open space connection with Pioneer Square
- Promote an infusing of divers activities into existing and infill buildings to energize the waterfront and help make is a more authentic and meaningful part of the city.

# Pike Place Market and Belltown

From Pike Street to Battery Street, where the viaduct curves eastward towards the Battery Street tunnel, proposed changes will influence the critical relationship between the waterfront and two downtown neighborhoods—the Pike Place Market and Belltown. Key issues and opportunities include:

- Enhance streetscape environment on Elliott and Western Avenues to support residential development in Belltown area.
- Create activity linkages between the waterfront and Belltown/Pike Place Market to further enhance development opportunities and strengthen the economic vitality and local support for retail uses in these neighborhoods.
- Opportunities for expanding waterfront streetcar route further north and/or to Seattle Center

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**Booklet Formatting**
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# Appendix

## Street Classification

| Street Name | Vehicular/Transit Classification | Pedestrian Street Classification |
|---|---|---|
| SR 99 | Regional Freeway | NA |
| Alaskan Way | Principal Arterial,<br>Minor Transit Street | Class II |
| Western Avenue | Principal Arterial, north of Bell Street;<br>Minor Arterial, south of Bell Street;<br>Minor Transit Street | Class I (Lenora to Stewart Street);<br>Class II (Denny Way to Lenora;<br>Stewart to Yesler Way) |
| Elliott Avenue | Principal Arterial;<br>Minor Transit Street | Class II |
| 1st Avenue | Minor Arterial;<br>Principal Transit Street (S. Royal Brougham to Stewart, and Broad to Denny Way);<br>Major Transit Street (Stewart to Broad) | Class I (S. Jackson to Cedar Street);<br>Class II (south of S Jackson and north of Cedar) |
| 2nd Avenue | Principal Arterial;<br>Major Transit Street (Lenora Street to 4th Avenue S);<br>Minor Transit Street (Lenora Street to Denny Way) | Class I (Cherry Street to Lenora Street);<br>Class II (Lenora to Denny Way;<br>Cherry to 4th Avenue S.) |
| Occidental Avenue | Local Access Street Yesler Way to S. King Street | Green Street Designation (Yesler Way to S. King Street) ;<br>Class II |
| Post Alley | Local Access | Class I Pedestrian Street |
| Broad Street | Principal Arterial;<br>Principal Transit Street 1st Avenue to 3rd Avenue;<br>Minor Transit Street 1st Avenue to Alaskan Way | Class II |
| Denny Way | Principal Arterial;<br>Major Transit Street (Western Avenue to 4th Avenue S) | Class II Pedestrian Street |
| Bay Street to 1st Avenue | Local Access Street | Green Street Designation |
| Eagle Street to 1st Avenue | Local Access Street | Green Street Designation |
| Clay Street to 1st Avenue | Local Access Street | Green Street Designation |
| Cedar Street to 1st Avenue | Local Access Street | Green Street Designation |
| Vine Street to 1st Avenue | Local Access Street | Green Street Designation |

| Street Name | Vehicular/Transit Classification | Pedestrian Street Classification |
|---|---|---|
| Wall Street to 1st Avenue | Local Access Street | Green Street Designation |
| Battery Street to 1st Avenue | Local Access Street | Class II |
| Bell Street to 1st Avenue | Local Access Street | Green Street Designation |
| Blanchard Street to 1st Avenue | Local Access Street | Green Street Designation |
| Lenora Street to 1st Avenue | Minor Arterial | Class II |
| Virginia Street to 1st Avenue | Minor Arterial | Class II |
| Stewart Street to 1st Avenue | Minor Arterial (east of 1st Avenue): Local Access Street (Pike Place to 1st Avenue) | Class II |
| Pine Street to 1st Avenue | Minor Arterial | Class I |
| Pike Street to 1st Avenue | Minor Arterial | Class I |
| Union Street to 1st Avenue | Minor Arterial | Class II |
| University Street to 1st Avenue | Local Access Street | Green Street Designation |
| Seneca Street | Local Access Street (Alaskan Way to Western Avenue); Undeveloped (Western to 1st Avenue); Minor Arterial/Minor Transit Street (1st Avenue to 2nd Avenue) | Class II |
| Spring Street | Local Access Street (Alaskan Way to 1st Avenue); Minor Arterial/Minor Transit Street (east of 1st Avenue) | Green Street Designation |
| Madison Street | Minor Arterial/Minor Transit Street (Alaskan Way to 1st Avenue); Principal Arterial/Minor Transit Street east of 1st Avenue | Class II |
| Marion Street to 1st Avenue | Local Access Street (Alaskan Way to 2nd Avenue); Minor Arterial/Minor Transit Street (east of 2nd Avenue) | Green Street Designation (Alaskan Way to 2nd Avenue) |
| Columbia Street | Local Access Street (Alaskan Way to 1st Avenue); Principal Arterial/Minor Transit Street (east of 1st Avenue | Class II |

| Street Name | Vehicular/Transit Classification | Pedestrian Street Classification |
|---|---|---|
| Cherry Street<br>1st Avenue to 2nd Avenue | Minor Arterial/Minor Transit Street | Class II |
| Yesler Way<br>Alaskan Way to 2nd Avenue | Minor Arterial/Minor Transit Street | Class II (except Class I for half block on either side of 1st Avenue) |
| Washington Street<br>Alaskan Way to 2nd Avenue | Local Access Street | Class II from Alaskan Way to alley west of 1st Avenue;<br>Class I from alley west of 1st Avenue to alley east of Occidental |
| Main Street<br>Alaskan Way to 2nd Avenue | Local Access/Minor Transit Street from Alaskan Way to 1st Avenue S;<br>Major Transit Street from 1st Avenue S to 2nd Avenue S | Class II from Alaskan Way to alley west of 1st Avenue;<br>Class I from alley west of 1st Avenue to alley east of Occidental |
| Jackson Street<br>Alaskan Way to 2nd Avenue | Planned Minor Arterial;<br>existing Principal Arterial (status?);<br>Minor Transit Street from 1st Avenue S to 2nd Avenue S | Class II from Alaskan Way to alley west of 1st Avenue;<br>Class I from alley west of 1st Avenue to alley east of Occidental |
| King Street to 2nd Avenue | Minor Arterial/Minor Transit Street | Class II |
| S. Royal Brougham Way | Regional Arterial | NA |
| S. Atlantic Street | Collector Arterial | NA |